

TAMIL NADU ELECTRICITY REGULATORY COMMISSION
(Constituted under section 82 (1) of the Electricity Act, 2003)
(Central Act 36 of 2003)

PRESENT:

Thiru S.Akshayakumar **Chairman**
Thiru G.Rajagopal **Member**
and
Dr.T.PrabhakaraRao **Member**

R.A No.1 of 2014

1. M/s.OPG Renewable Energy Private Ltd.,
No.167,St.Mary'sRoad,Alwarpet
Chennai -600 032.
 2. Tamil Nadu Electricity Consumers Association
1stFloor,SIEMA Building,P.B.No.3847,
8/4,RaceCourse,Coimabtoe – 641 018.
- Petitioners
(Thiru N.L.Rajah,
Senior Advocates for Petitioners)

Vs

Tamil Nadu Generation and Distribution
Corporation Limited(TANGEDCO)
NPKRR Maaligai,
144,AnnaSalai,
Chennai – 600 002.

.... Respondent
(Thiru M.Gopinathan,
Standing Counsel for the Respondent)

R.A No.4 of 2014

The Southern India Mills Association
No.41,Race Course Road,
Coimbatore – 641 018.

.... Petitioner
(Thiru N.L.Rajah
Senior Advocate for Petitioner)

Vs

Tamil Nadu Generation and Distribution
Corporation Limited(TANGEDCO)
NPKRR Maaligai,
144,AnnaSalai,
Chennai – 600 002.

.... Respondent
(Thiru M.Gopinathan,
Standing Counsel for the Respondent)

Dates of hearing : **22.12.2014,19.01.2015,25.04.2016,
02.06.2016 and 01.08.2016**

Date of Order : **31.07.2017**

ORDER

1. The issues taken up in R.A No. 1 of 2014 and R.A No.4 of 2014 are based on the directions issued to the State Commission by Hon'ble Appellate Tribunal of Electricity (APTEL) in the order dated 27.10.2014 in Appeal Nos. 196 of 2013 and 199 of 2013 filed by M/s.OPG Renewable Energy Private Limited and Tamil Nadu Electricity Consumers Association and in the order dated 09.04.2013 in Appeal No. 257 of 2012 filed by M/s. Southern India Mills Association respectively. The remanded matters in Appeal No.257 of 2012 taken up in R.A No.4 of 2014 being common to the issues remanded in Appeal No.196 & 199 of 2013 taken up in R.A No.1 of 2014, both the remand applications have been clubbed.

2. Facts of the case:-

The Appeal Nos.196 of 2013 and 199 of 2013 were filed before APTEL by the appellants, M/s.OPG Renewable Energy Private Limited and Tamil Nadu Electricity Consumers Association challenging the Commission's order on Determination of Tariff for Generation and Distribution passed in T.P No.1 of 2013 dt.20.6.2013 and the Appeal No.257 of 2012 was filed by M/s.Southern India Mills Association before the APTEL against the order on Determination of Tariff for Generation and Distribution passed by the Commission in Order No.1 of 2012 dt.30.3.2012. The appellants contested on various issues decided in the tariff orders passed by the Commission. The Hon'ble APTEL in its order dt.27.10.2014 and 09.4.2013 respectively in the said Appeal Nos.196 of 2013 & 199 of 2013 and Appeal No.257 of 2012 partially allowed the appeals and remanded certain matters to the State Commission with directions for consideration in each of the Appeals. Of the directions issued on various matters, part of them have been complied through issue of orders based on petitions filed by TANGEDCO and amendment to regulations. The directions to the extent that require detailed analysis/ scientific study are discussed in this order.

3. Directions issued in Appeal No.257 of 2012:-

3.1. The Hon'ble APTEL in its order dated 09-04-2013 has issued the following directions:-

(i) The State Commission shall determine voltage-wise cost of supply and corresponding cross subsidy for each category of consumers in the next tariff order;

(ii) The State Commission shall reconsider and re-determine the differential price of electricity for peak and off-peak hours. The following observations of the Hon'ble APTEL would be relevant in this context:-

“The aim of providing differential tariff for peak and off-peak hours is to shift load from peak to off-peak hours with a view to optimize the generation capacity and minimize the cost of power procurement for the distribution licensee. However, in the absence of a specific study on pricing of electricity for different time blocks the weighted average energy rate for peak, off-peak and normal hours (other than peak and off-peak) should be equal to the average energy rate decided for a particular category of consumer. In the present case when no specific study for pricing of electricity has been carried out, the energy rate of tariff decided by the Commission for the Appellant’s category is lower than the weighted average rates of energy for peak, off-peak and normal hours. It is also to be considered whether in view to the Restriction and Control Measures and penal rates for withdrawal in excess of peak hours demand and energy quota, whether there is any purpose of having a differential tariff for peak and off-peak hours. We, therefore, direct the State Commission to reconsider and re-determine the differential price of electricity for peak and off-peak hours. Accordingly, the matter is remanded back to the State Commission.”

3.2. Directions issued in Appeal Nos. 196 & 199 of 2013:-

Directions on matters as follows have been issued by the Hon'ble APTEL in the above appeals:-

- (i) The State Commission shall true up/provisionally true up the capitalization for FY 2013-14 immediately and to account for the shortfall with carrying cost while determining tariff for FY 2015-16 and to approve the capital investment plan of TANGEDCO for FY 2014-15 and FY 2015-16 after following due process of law and consider the same while approving tariff for FY 2015-16. This was to be done based on submission of actual accounts of capital expenditure and capitalization for FY 2014 and capital investment plan for FY 2015 and 2016.
- (ii) The State Commission shall re-determine rate for peak hours/off peak hours as per the findings in Appeal No.257 of 2012.
- (iii) The State Commission shall determine the voltage wise cost of supply as per the directions and determine cross subsidy transparently for FY 2012-13, 2013-14 and 2014-15 in the tariff order for 2015-16.
- (iv) The State Commission shall notify road map for reduction of cross subsidy as per the Tariff Policy after following due process of law.

4. Details of hearing and submission of reports by TANGEDCO:-

4.1. The remand applications were taken up for hearing on 22.12.2014. The parties were directed to file their submissions by 12.01.2015. TANGEDCO affirmed of their submissions on voltage wise cost of supply and data to assess peak/off peak hour tariffs, the references of which were made by the Commission in the suo motu tariff order SMT No.9 of 2014 dt. 11.12.2014, and the submission of the capital investment plan for FY 2015 and FY 2016 to the Commission that was numbered as M.P No.39 of 2012. TANGEDCO further stated that the capital expenditure on quarterly basis is being submitted to the Commission. The Commission then directed the Petitioners (appellants before APTEL) to submit their report within two weeks. During the hearing on 25.04.2016, TANGEDCO was directed to serve a copy of the affidavit to the Petitioners.

4.2. TANGEDCO filed an additional affidavit on 02.06.2016. TANGEDCO in their additional affidavit sought to justify the levy of peak hour charges and to retain peak hour and off peak hour charges. TANGEDCO contended that inspite of restriction and control measures that prevailed, the consumption by HT industrial consumers during peak hours was 1752 MU which was 8% above the restriction. Had there not been restrictions on usage of supply and levy of excess tariff with penalty, the consumption at a point when TANGEDCO faced power shortage would have been very high.

4.3. TANGEDCO further contended that peak hour power source is hydro which is used after exhausting all other sources and in case of non-availability of hydro power, power has to be procured and therefore the cost of hydro power should be the equivalent to the price of power procured from exchange. The estimated total cost to meet peak demand of consumption by HT industries by purchase of power from IPPs, CGPs, Hydro, Exchange was Rs.1301.43 crores and the total revenue from HT industrial consumers was Rs.1156.32 crores. In the absence of power from Hydro, the entire cost of intended power would be the highest cost of power traded through power exchange and on this count the total cost of power would be Rs.1607.78 crores. The Petitioners were granted a weeks time to file rejoinder. The Petitioners have not filed any rejoinder.

5. Findings of the Commission:

The issues on remand detailed in para 3 of this order are taken up one by one:

5.1. Determination of voltage wise cost of supply and cross subsidy:-

5.1.1.This is an issue that is common to the remand in R.A No.1 of 2014 and R.A No.4 of 2014. The direction by Hon'ble APTEL in Appeal No.257 of 2012 dated 09.04.2013 on this issue was to determine the voltage wise cost of supply and corresponding cross subsidy for each category of consumers in the next tariff order.The direction in Appeal Nos.196 & 199 of 2013 was to determine voltage wise cost of supply by the simple approach suggested by the Tribunal in their

order dated 28.07.2011 in Appeal Nos.102 & 196 of 2010 and determine cross subsidy transparently for the years 2012-13,2013-14 and 2014-15 in the tariff order of 2015-16.

5.1.2. As per the TNERC (Terms and Conditions for Determination of Tariff) Regulations, 2005 and the regulations under the MYT framework, the distribution licensee is required to conduct a study to determine the voltage level wise cost to serve for each category of consumers and submit the same to the Commission. Due to the failure of the licensee in complying with the above provisions, the Commission issued a directive as part of its Tariff Order for FY 2012-13, directing the licensee to submit a study report on computation of consumer category wise and voltage wise 'cost to serve' (CoS) along with the basis of allocation of different costs and losses to various consumer categories at various voltage levels. TANGEDCO had complied in part of the direction in 2013 and had submitted category wise cost of service but stated its inability to compute voltage wise cost to serve.

5.1.3. In the Tariff order of 2013,Commission observed and directed as follows:

“Even though TANGEDCO has attempted to calculate cost to serve, it has been unsuccessful in doing so at various voltage classes. The Commission once again directs TANGEDCO to submit a study report on methodology for computation of voltage wise 'cost to serve' (CoS) along with the basis of allocation of different costs and losses to

various voltage levels. This shall be examined by the Commission and approved with such modifications as it may deem fit or consider a better alternate computation.”

5.1.4. Commission proceeded with computation of voltage wise cost to serve based on available data and worked out cross subsidy based on average cost of supply in the tariff order of 2013.

5.1.5. In the Appeal No.196 of 2013 and Appeal No.199 of 2013 filed against the Commission's tariff order of 2013 dt.20.6.2013, Hon'ble APTEL referred to the methodology given by APTEL in judgment dt.30.5.2011 in Appeal No.102 of 2010 to determine voltage wise cost of supply that was relied upon in judgment dt.28.7.2011 in Appeal No.192 of 2010 and 206 of 2010 filed against the tariff order of 2010 issued by this Commission. The extract of the order is reproduced :

“34. Thus, Power Purchase Cost which is the major component of Tariff can be segregated for different voltage levels taking into account the transmission and distribution losses, both commercial and technical, for the relevant voltage level and upstream system. As segregated network costs are not available, all the other costs such as Return on Equity, Interest on Loan, depreciation, interest on working capital and O&M costs can be pooled and apportioned equitably, on pro-rata basis, to all the voltage levels including the Appellant's category to determine the cost of supply. Segregating Power Purchase cost taking into account voltage-wise transmission and distribution losses will be a major step in the right direction for determining the actual cost of supply to various consumer categories. All consumer categories connected to the same voltage will have the same cost of supply. Further, refinements in formulation for cost of supply can be done gradually when more data is available.”

In the above order, TANGEDCO was directed to provide necessary data to the Commission.

5.1.6. TANGEDCO has furnished a study report based on the data for the year 2013-14 in the month of November 2014. Commission has analysed the report submitted by TANGEDCO and has endeavoured to determine voltage wise cost to serve based on the methodology specified by APTEL. In accordance to the directions of APTEL in the Appeal Nos.196 & 199 of 2013 and Appeal No.257 of 2012, the details of voltage wise cost to serve for categories of consumers determined shall be published in the Tariff order to be issued on the petition filed by TANGEDCO vide T.P No.1 of 2017.

5.2 Roadmap of cross subsidy –

5.2.1 Commission has undertaken the study to notify roadmap for reduction of cross subsidy. The same shall be notified in the Tariff order to be issued on the petition of TANGEDCO in T.P No.1 of 2017.

5.3. Approval of capital expenditure for FY 2013-14 and capital expenditure plan for FY15 and FY16

5.3.1. TANGEDCO's petition filed in T.P No.1 of 2017 involves true up for the years FY 2012 to FY 2016. The true up for capitalisation for FY 2013-14 shall be taken care of while the Commission issues the order in the Tariff Petition No.T.P No.1 of 2017 filed by TANGEDCO. The capital investment plan for the years

2014-15 and 2015-16 filed by TANGEDCO were taken up in M.P No.39 of 2012 and orders issued on 31.01.2017.

5.4. Peak hour and non- peak hour tariffs:-

5.4.1. TANGEDCO in the tariff petition filed in T.P No.1 of 2011 seeking revision in tariff for 2012 had sought for increase in the evening peak hour timings from 6.00 P.M to 9.00 P.M to 6.00 P.M to 10.00 P.M. Commission in the Tariff Order No.1 of 2012 dt.30.03.2012, which was issued after examining comments and suggestions from stakeholders and conducting public hearing, observed that sufficient data was not available to assess the impact of this additional hour of Peak hours, and hence in the absence of sufficient data, Commission decided to continue with the existing TOD slabs. The Commission also did not agree with the suggestion that peak hour tariff and night hour rebate should be treated on equal footing.

5.4.2. In the Tariff order of 2012, Commission levied a charge of 20% extra on the energy charges for the energy recorded during peak hours and fixed the duration of peak hours as 6.00 A.M to 9.00 A.M and 6.00 P.M to 9.00 P.M and allowed a reduction of 5% on the energy charges for the consumption during 10.00 P.M to 5.00 A.M as an incentive for night consumption.

5.4.3. In the Appeal No.257 of 2012 filed against the said order of the Commission dated 30-03-2012, the Southern India Mills Association(SIMA) contended before APTEL that the State Commission has decided the disincentive for consumption of electricity during the peak hours at 20% whereas for consumption during off-peak hours the incentive of only 5% has been provided and that the incentive for drawal during off peak hours and disincentive for drawal during peak hours should be of the same order.

5.4.4. In the above appeal, the Hon'ble APTEL directed the Commission to re-determine the differential pricing of energy during peak and off-peak hours, as reproduced below:

“14.4 We notice that the State Commission has provided for 20% extra charge on energy charges for the energy consumed during peak hours i.e. 6:00 AM to 9:00 AM and 6:00 PM to 9:00 PM for the HT industrial consumers. On the other hand the HT industrial consumers are allowed a reduction of 5% in the energy charges for the consumption during off-peak hours i.e. from 10:00 PM to 5:00 AM, as an incentive for night hours consumption. These charges/incentive have been continuing from the past. However, the State Commission has decided to maintain the rates which were prevailing earlier and has not decided the rates based on some study. We find that the State Commission has provided disincentive for peak hours drawal in view of high cost of procurement of expensive power during peak hours and balance demand. However, incentive for off-peak hours has been continued despite shortage during the off-peak hours.

14.5 The aim of providing differential tariff for peak and off-peak hours is to shift load from peak to off-peak hours with a view to optimize the generation capacity and minimize the cost of power procurement for the distribution licensee. However, in the absence of a specific study for pricing of electricity at off-peak and peak hours, the weighted average of energy rates for the peak, off-peak and normal hours (other than peak and off-peaks) should be equal to the average energy rate decided for a particular category of

consumer. In the present case when no specific study for peak/off-peak pricing has been carried out, the energy rate of the tariff decided by the Commission for the Appellant's category is lower than the weighted average rate of energy for peak, off -peak and the normal hours.

14.6 We also notice that the Restriction and Control Measures are also in vogue in the State and the HT industrial consumers are allowed a small quota of demand and energy during the peak hours. The drawal in excess of the specified quota results in imposition of penal rates at substantially higher rate than the normal rates. The State Commission may also consider whether in view of the Restriction and Control Measures and penal rates of excess drawal over the peak hours demand and energy quota whether there is any purpose of having a differential energy tariff for peak and off-peak hours.

14.7 We, therefore, direct the State Commission to reconsider and re-determine the differential pricing of energy during peak and off-peak hours. Accordingly, the matter is remanded back to the State Commission.”

5.4.5. Commission in the Tariff order 1 of 2013 dt.20.6.2013, pending a detailed study, retained the peak hour and off peak hour charges at existing levels and directed TANGEDCO to carry out a detailed study in this regard and furnish to the Commission. In the same tariff order, Commission also analysed the system load curve data from July 2012 to May 2013 and made the following observations:

“It can be inferred from the load data that there is no surplus even in the off- peak hours, even in the month of May to September when wind energy is available. Similarly in the peak hour, it is only the restricted demand under R&C that is being met. Hence it can be concluded that there is a shortage in the peak hours and no surplus power available in the off peak hours.”

5.4.6. On the above issue, Hon'ble APTEL in its order dated 27-10-2014, in the Appeal Nos.196 & 199 of 2013 referring its earlier findings in Appeal No.257 of 2012 dated 09-04-2013, directed the Commission to re-determine the rates for peak hour and off peak hour.

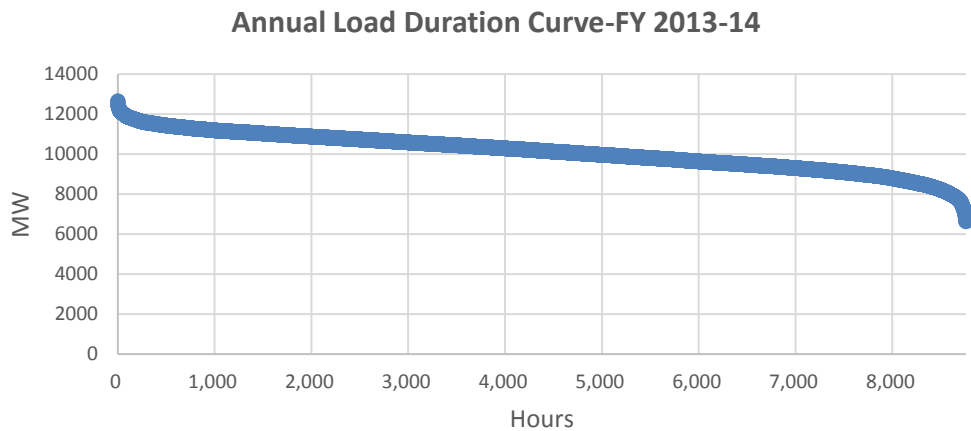
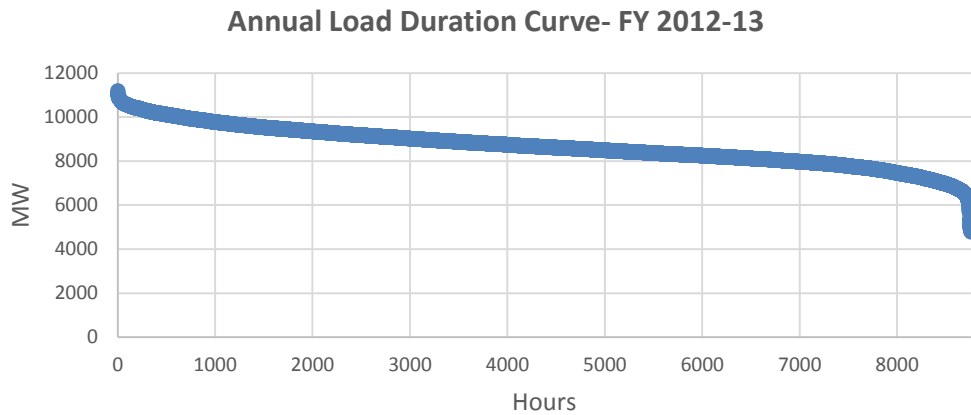
5.4.7. TANGEDCO in line with the direction of the Commission submitted initially a preliminary study report with cost of power purchase details and then a revised report with details of load generation balance and power procurement. TANGEDCO has contended that had there not been ToD tariff with peak hour surcharge, the HT industrial consumption during the period of restriction and control in supply would have been high, worsening the power condition affecting all other category of consumers. The domestic and commercial category of consumers are major contributors to the peak demand but are incapable of shifting the loads to off peak hours. Despite the shortage in power, the rebate of 5% was offered so as to encourage the HT industrial category to make use of off peak power or shift the operations to the off peak hours. Commission has made a detailed study of the report on ToD charges justifying the additional charges applicable to HT IA industrial consumers. The licensee had furnished the hourly data of demand, load met, and data of all generation sources(own generation, power from CGS, wind, LTOA, MTOA, STOA, power purchased from CGPs, Bio

mass, co-generation power plants, from exchanges and through unscheduled interchanges).

5.4.8. For the purpose of study, Commission considered the hourly data for every month of FY 2012-13 and FY 2013-14 (8760 data points) and assessed the load met by the licensee for every hour of the day for each month. The annual and monthly load curves were then plotted based on the demand met by the Licensee for every one hour interval. A load curve was also plotted for analysis of how the load curve varied throughout the 24-hour window over the year. Commission has observed the daily variation and seasonal variation in the demand met by the Licensee.

5.4.9. From the hourly data for each month, it is observed that Maximum Demand for FY 2012-13 was 11,192.2 MW on June 26, 2012 at 1900 hours and for FY 2013-14 was 12,649.5 MW, which occurred on March 26, 2014 at 1200 hours. The Minimum Demand for FY 2012-13 and FY 2013-14 was 4,783.50 MW and 6,631.10 MW. The large difference between maximum demand and minimum demand is the result of the daily variation and seasonal variation. Such Maximum Demand and Minimum Demand has been recorded for a very small duration, as can be seen from the Load Duration Curve of TANGEDCO for FY 2012-13 and for FY 2013-14, as shown in the following Figures:

Figure:1.1 Annual Load Duration Curve for FY 2012-13 and FY 2013-14



5.4.10 Average demand for FY 2012-13 is 8,672 MW and the Average Demand for FY 2013-14 is 10,102 MW. For assessing the peak hours and off-peak hours, the Commission has considered the daily load curve of the particular day of the month on which the Maximum Demand in that month has occurred. The Peak hours and off-peak hours for each month have been derived by study of the representative Monthly Demand Curves for FY 2012-13 and based on the

Monthly Load Curves for FY 2013-14. The Monthly Demand Curves were considered for FY 2012-13 as the effect of R&C measures was severe in the year and the load curves do not provide a representation of the actual demand during the period mentioned.

Figure 1.1: Monthly Demand Curve for each month for FY 2012-13

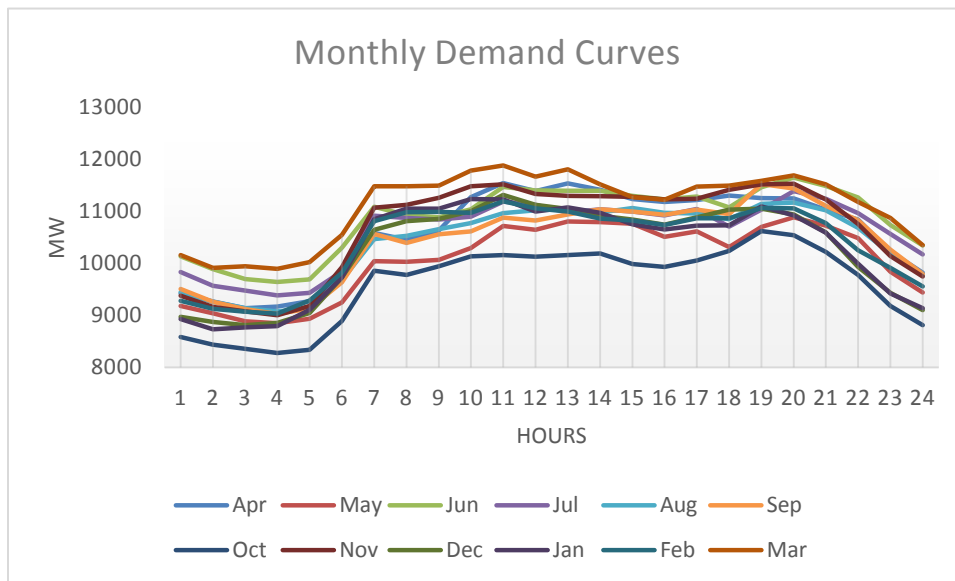
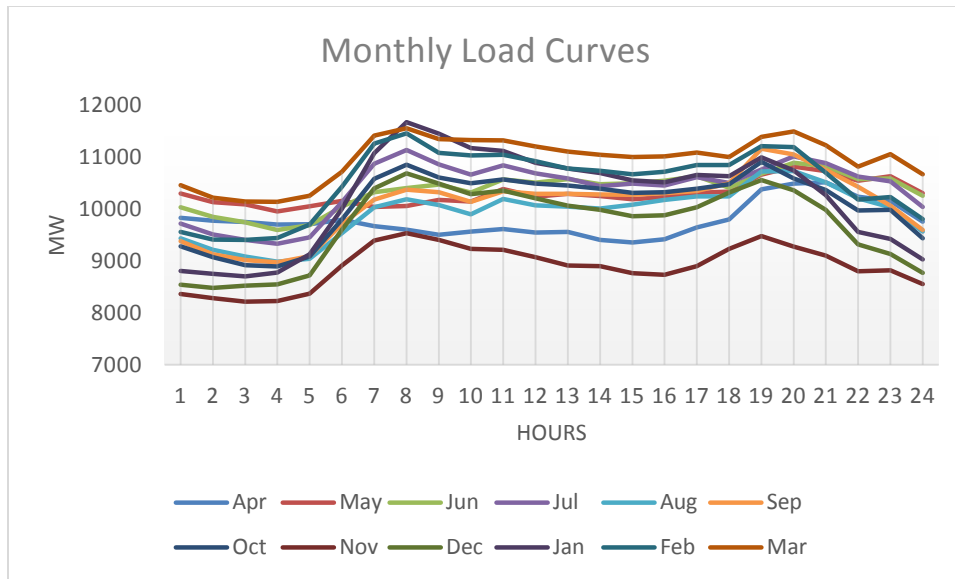


Figure1.2: Monthly Load Curve for each month for FY 2013-14



5.4.11. The monthly demand/load curves show the peak hours, off peak hours and normal hours as under:

- (a) Morning Peak hours - 0600 hours to 0900 hours
- (b) Evening Peak hours – 1800 hours to 2100 hours
- (c) Off-peak hours – 2200 hours to 0500 hours
- (d) Normal hours – 0500 to 0600 hours, 2100 to 2200 hours, and 0900 hours to 1800 hours

5.4.12. Commission noted that TANGEDCO has contracted power from various sources to meet its base load and peak load. The month-wise base load has been computed for FY 2012-13 and FY 2013-14, based on which, the Commission has computed the quantum of energy required for meeting the load over and above the base load. The peak energy requirement computed is 3916 MU for FY 2012-13 and 3753 MU for FY 2013-14. Considering the sources of

power from the highest rank in merit order stack in descending order approved by the Commission after true up, the per unit cost to meet peak hour for FY 2012-13 through exchange works out to Rs.5.13 and the per unit cost to meet peak hour for FY 2013-14 through medium term, short term power purchases works out to Rs.4.98. The weighted average energy charges computed for FY 2012-13 is Rs.2.07 per unit and for FY 2013-14 is Rs.2.42 per unit. The licensee incurs expenses to meet the peak power more than or at twice the rate of normal energy charges. From the load generation balance report, Commission noted that there was always a deficit in supply be it normal or peak or off peak hours.

5.4.13. Thus the levy of surcharge of 20% for consumption during peak hours stands justified based on the analysis carried out on the Load Generation Balance Report submitted by the distribution licensee, TANGEDCO, for FY 2012-13 and FY 2013-14. The power crisis during the period under consideration was acute and inspite of shortage of power, a 5 % rebate has been offered for the consumption by HT industrial consumers during off peak hours.

5.4.15. The Commission finds it prudent to levy 20% surcharge on power consumed during peak hours and 5% rebate on power consumed during off-peak hours for FY 2012-13 and FY 2013-14.

Ordered accordingly.

6. Appeal:-

An appeal against this order shall lie before the Appellate Tribunal for Electricity under section 111 of the Electricity Act, 2003 within a period of 45 days from the date of receipt of a copy of this order by the aggrieved person.

(Sd)
(Dr.T.PrabhakaraRao)
Member

(Sd.....)
(G.Rajagopal)
Member

(Sd.....)
(S.Akshayakumar)
Chairman

/ True Copy /

Secretary
Tamil Nadu Electricity
Regulatory Commission